

[Claims]

[Claim 1] A microorganism culturing apparatus comprising: microorganism, a culturing solution for culturing the microorganism, a container for holding the culturing solution, and a support for accommodating the container, wherein the container is kept in a predetermined shape as supported with the support.

[Claim 2] The culturing apparatus of Claim 1, wherein the support for keeping the container in a predetermined shape includes a bottom member forming a bottom surface and side plates forming its side surfaces; the side plates and the container having transparent portions, respectively; and the transparent portions of the side plates and the transparent portions of the container overlap each other.

[Claim 3] The culturing apparatus of Claim 2, wherein the side plates are made of flat plates and at least one set of paired flat plates oppose each other.

[Claim 4] The culturing apparatus of Claim 1, wherein the support comprises side plates for forming its side surfaces and a framework for supporting the side plates; and the end portions of the side plates have attachment portions for engaging with the framework and are removably fixed to the framework.

[Claim 5] The culturing apparatus of Claim 4, further comprising: posts disposed upright with their both ends fixed to the framework; and pressing members, disposed outside and parallel to the posts, wherein the side plates are squeezed between the pressing members and the posts, and the pressing members are fixed to the posts.

[Claim 6] The culturing apparatus of Claim 5, wherein the side plates are flat plates disposed end to end in the longitudinal direction of the framework, the flat plates are interconnected through the posts end to end in the longitudinal

direction of the framework, with adjacent two ends of the flat plates fixed to one post with one pressing member.

[Claim 7] The culturing apparatus of any one of Claims 1 to 6, further comprising, in the container, a gas introduction tube for introducing gas into the culturing solution.

[Claim 8] The culturing apparatus of Claim 4, wherein the side plates are supported for rotation about their bottom side ends in the state of the fixation between the attachment portions and the framework released.

[Claim 9] The culturing apparatus of Claim 8, wherein the ends of the side plates on the upper portion side of the framework are connected through wires to the upper portion side of the framework.

[Claim 10] The culturing apparatus of Claim 8, further comprising a stopper that is provided at the bottom portion to restrict the rotation range of the side plates.

[Claim 11] The microorganism culturing apparatus of Claim 4, wherein the framework and the sides plates are movable relative to each other in the state of the fixation between the attachment portions and the framework being released; and the relative motion produces a clearance between the upper portion of the framework and the ends of the side plates on the upper portion side of the framework.

[Claim 12] A microorganism culturing apparatus for culturing microorganism in a culturing solution, comprising: side plates for forming side surfaces to form a culturing space, and a bottom portion for forming the bottom of the culturing apparatus to accommodate the culturing solution, wherein the bottom portion is formed in a convex shape directed vertically down toward the center of width; and a gas introduction tube for introducing a gas into the culturing solution is disposed above

the bottom portion at the lower end of the convex-formed portion.

[Claim 13] The culturing apparatus of Claim 12, wherein the gas introduction tube is provided with holes along the entire circumference of its cross-sectional circle.

[Claim 14] The culturing apparatus of Claim 1 or 2, wherein the container incorporates: a gas introduction tube having minute holes along the entire circumference of its cross-sectional circle and a gas supply tube for supplying gas to the gas introduction tube, and has an opening at only one position for putting in microorganism and a culturing solution, with one end of the gas supply tube connected to the gas introduction tube and with the other end thereof extending out through the opening.

[Claim 15] The culturing apparatus of Claim 14, wherein the container is a rectangular bag having longer sides and shorter sides; the opening is provided at one end portion of the shorter side of the rectangle; the gas introduction tube is disposed at the other end portion of the shorter side of the rectangle along the longer side of the rectangle; and shaft passage members for letting a shaft pass through are provided along the longer side on the side the opening is provided.

[Claim 16] A method of inserting the container or the bag, for holding the culturing solution, into the support of the culturing apparatus of Claim 7, comprising: providing the bag of Claim 15; passing a shaft longer than the longer side through the shaft passage members of the bag; turning the shaft to roll up the bag around the shaft with the gas introduction tube disposed in the lower part of the bag parallel to the shaft so that the part of the bag the gas introduction tube is disposed in is located on the outermost side and both ends of the shaft are exposed; then placing the roll body made up of the shaft and

the bag above the framework; and rolling out the bag from the shaft to insert into the framework.